

In the Claims

1. (Currently amended) An airborne long-range laser imaging system, for obtaining an image showing high resolution details of a specific object having dimensions in the order of several meters, comprising:
 - a. A laser source and focal plan array sensing detector, both being mounted on a same gimbals platform;
 - b. A pulse generator for providing a series of pulses to said laser source during a step-scanning period, thereby activating laser illumination by said laser source during each of said pulses, the laser source being characterized in that ~~its illumination beam is the width of the~~ illumination beam is in the range of 0.1mrad to 0.4mrad so concentrated that it produces an illumination spot that covers only a portion of said object having dimensions of up to several meters and located at a long range;
 - c. A scanning unit for receiving a line of sight direction to said object, and for providing to the gimbals a scanning signal for effecting a stepping-image capturing sequence in such a manner as to scan the object and the area in which said object is included, wherein said area having dimensions in the order of up to a few tens of meters;
 - d. A motion compensation unit for providing to said gimbals, in addition to said scanning signal a motion compensation signal for compensating for

the aircraft motion and for the aircraft vibrations;

e. A timing unit for:

- i. Activating, in coordination with the said scanning unit, said pulse generator during the scanning period, in order to produce over the target a plurality of illumination spots, each relating to one of said laser pulses, and wherein each of said spots overlaps at least a portion of one or more adjacent spots; and
- ii. Activating in a non-gated manner said focal plan array sensing detector during the illumination of the target by each specific pulse in order to capture a plurality of distinct spot-images, each relating to a single illumination pulse;

f. A memory unit for receiving from said focal plan array sensing detector the captured spot-images, and for storing them;

g. A correlating unit for correlating images stored in said memory by finding similarity between features of overlapping portions of neighboring spot-images; and

h. A combining unit receiving information from said correlating unit for combining the spot-images to form a complete image of the scanned area.

2. (Original) A system according to claim 1 wherein the degree of overlap is determined by the speed of scanning movement, and by the rate of the series of pulses generated by the pulse generator.

3. (Original) A system according to claim 1 wherein the amount of overlapping between spots is inversely proportional to the distance from the object.
4. (Original) System according to claim 1 wherein the gimbals receive a direction signal to the object from an object locating unit, and motion compensation signal from a motion compensation unit.
5. (Original) System according to claim 1 wherein the size of the scanning steps is made inversely proportional to the range to the object.
6. (Canceled)
7. (New) System according to claim 1 wherein the rate of overlap between adjacent spots is in the range of 10% - 30%.